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October 11, 2004
Our Ref: W-1143-A

The Honorable Jeffrey W. Runge, M.D.
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

NHTSA 04-17694

Re: Response to Notice of Proposed Rulemaking
Docket Number NHTSA-04-17694; 69 FR 27990
FMVSS No. 214 – "Side Impact Protection"

Dear Dr. Runge:

Nissan North America, Inc. on its behalf and on behalf of Nissan Motor Company, Ltd., of Tokyo, Japan ("Nissan"), submits the attached comments in response to the Notice of Proposed Rulemaking (NPRM) referenced above, which describes amendments to Federal Motor Vehicle Safety Standard (FMVSS) No. 214 – "Side Impact Protection." The notice proposes to add an oblique pole test to the standard, as well as replace the currently used SID 50 percentile male dummy with two new dummies of different sizes.

Nissan appreciates this opportunity to provide comments regarding NHTSA's proposal. However, the substantial amendments in the NPRM require an equally substantial period of review to provide a detailed analysis. Given the timeframe allowed for the comment period, and unavoidable delays procuring the proposed test dummies, Nissan is submitting these preliminary comments and expects to provide supplemental information once further review of the proposal and evaluations with the new dummies have been completed. We ask that the Agency consider either extending the comment period or including our supplemental submission in the Agency's rulemaking process.

Should you have any questions regarding the content of this submission, please contact Mr. Hayato Akizuki of my staff at (703) 456-2557.

Sincerely,

Harland Reid

Harland Reid
Senior Director
Government Affairs Office
Nissan North America, Inc.

COMMENTS OF NISSAN MOTOR CO., LTD. TO THE
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
NOTICE OF PROPOSED RULEMAKING
49 CFR Part 571
FMVSS 214 – "Side Impact Protection"
68 Fed. Reg. 27990; May 17, 2004 (Docket NHTSA-2004-17694)

Nissan Motor Co., Ltd. ("Nissan") offers the following comments in response to the Agency's recently published Notice of Proposed Rulemaking (NPRM) concerning amendments to Federal Motor Vehicle Safety Standard (FMVSS) 214 – "Side Impact Protection." The Agency's notice proposes detailed technical specifications for an oblique pole test to supplement the existing moving deformable barrier (MDB) impact required by the standard. Additionally, the NPRM proposes to replace the current side impact dummy (SID) mandated by FMVSS 214 with two new dummies of different sizes; EuroSID version 2 with rib extensions (ES-2re) and SID version II – small with floating rib guides (SID-IIsFRG).

The information presented here represents a preliminary examination of NHTSA's proposal. Given the magnitude of the regulatory requirements proposed, a detailed analysis was not possible in the timeframe allowed for comment. Nissan must first develop experience using the proposed test dummies in the proposed tests before providing full comment on issues related to the NPRM. NHTSA had not adopted the proposed dummies before publishing the NPRM and the consequent limited production capability of the companies manufacturing ES-2re and SID-IIsFRG have delayed Nissan in acquiring the dummies. We expect to obtain them before the end of the year and will begin in-depth research, including vehicle testing, shortly thereafter. Nissan intends to submit supplemental comments based on data from that research before May of next year. We ask that the Agency either extend the comment period until May, 2005, or consider our supplemental comments before issuing its final rule.

Nissan supports the Agency's primary goal of improving head protection for vehicle occupants, as evidenced by our commitment to the recent voluntary industry standard for side impact compatibility, initiated in December of 2003. However, Nissan has several concerns regarding the Agency's proposal as detailed below.

Application Timing and Phase-in

In reference to compliance with the proposed MDB requirements, NHTSA indicates that:

> *"Countermeasures that include padding and simple redesign of the armrest area are available to some vehicles."* (69 FR 28015)

Because the test dummies have not been available for use in any evaluations, Nissan is unable to confirm which of our vehicles, if any, would comply with changes only to padding or armrest design. Although we have not yet had the opportunity to do a detailed analysis, our experience with side impact crashes leads us to believe that it would be necessary to make significant changes in door design to comply with the proposed requirements. Some vehicles may necessitate full redesign of the door structure itself. Ensuring that all of our vehicles meet the amended requirements by September 1, 2009 may not be possible.

For these reasons, we request the agency modify the application timing proposed in the NPRM to introduce a single, common phase-in for the proposed amendments. The phase-in we suggest is identical to that proposed by NHTSA for the oblique pole test with a slight modification to allow the application of carry over credits for the first three years. If the Final Rule were published in 2005, the resulting phase-in for all amendments would require 20% compliance from September 2009 to August 2010, 50% compliance from September 2010 to August 2011, 100% compliance, including credits, from September 2011 to August 2012, and compliance by all vehicles produced thereafter. The additional year to apply advanced credits would allow Nissan to more efficiently apply our resources when redesigning our vehicles to meet the new requirements.

Dummies and Injury Criteria

SID-HIII / ES-2re / WorldSID

Nissan agrees that it is important to use a test device with a high level of biofidelity to best represent the kinematics and injury response of the occupant in the struck vehicle. We also believe that the ES-2re represents an improvement in biofidelity over the SID, but, as NHTSA is

aware, the WorldSID dummy is another option that will be imminently available.

While NHTSA does not have experience with WorldSID, the prototypes of the dummy have been tested by a variety of organizations around the world. The dummy has shown a higher biofidelic response than ES-2re as reported by OSRP in the ISO/TC22/SC12/WG5 last May. In OSRP's testing, the biofidelity of the WorldSID and the ES2-re were respectively determined as 7.6 and 4.2 using the 10 point ISO biofidelity rating system. Additionally, WorldSID contains a wider array of instrumentation than ES-2re and is therefore equipped to perform injury assessments that would not be possible with ES-2re.

NHTSA should further consider the significant advantages of WorldSID before proceeding with rulemaking. Nissan understands that the Agency is not considering WorldSID at this time because the Agency would like to expedite the FMVSS 214 rulemaking. However, Nissan is concerned that this course of action will cause a significant delay in implementing WorldSID in FMVSS because of the lengthy regulatory process required to upgrade test devices. To avoid a protracted delay in introducing WorldSID to FMVSS 214, we suggest that NHTSA suspend the current rulemaking until the Agency evaluates the dummy and has the opportunity to formally introduce it into Part 572.

It is likely that production versions of WorldSID will be ready shortly and that NHTSA would be able to evaluate the dummy within an abbreviated timeframe by building upon the experience of other organizations. If the Agency decided to delay rulemaking until WorldSID could be evaluated, the industry's voluntary commitment on side airbag installation would continue to progress in the meantime and provide the benefits expected by NHTSA.

Nissan believes that adopting WorldSID into FMVSS 214 instead of ES-2re is the best direction for world harmonization of side impact requirements.

Seating Procedure for the Oblique Pole Test

NHTSA has proposed to align the test vehicle in the oblique pole impact so that the centerline of the pole passes through the center of gravity of the head of the seated occupant. The same concept is used to determine the impact reference line in the optional pole test in FMVSS 201. Nissan assumes that the purpose of this alignment is to facilitate a head strike with the external pole in order to sufficiently exercise dynamic head protection systems present in the vehicle.

Although developed with the same intent, the proposed seating procedure for the FMVSS 214 oblique pole test does not contain an important provision adopted into the seating procedure for the FMVSS 201 pole test. In order to ensure that the dummy's head does not contact the B-pillar before striking the pole, the FMVSS 201 pole test seating procedures contain a requirement in S8.28 to maintain a 50 mm clearance between the rear of the dummy's head and the edge of the window opening as follows:

> *"Construct a line in the plane that contains the rearward point of the front door daylight opening and is perpendicular to the longitudinal vehicle center line. Measure the longitudinal distance between the rearmost point on the dummy head and this line. If this distance is less than 50 mm (2 inches) or the point is not forward of the line, then the seat and/or dummy positions shall be adjusted . . . "*

Avoiding contact with the B-pillar improves the repeatability of the test and ensures the dummy experiences the most severe head impact by contacting the striking pole. However, when we seat the dummy in the vehicle according to the proposed procedure, the head of the SID-IIsFRG might be close enough to the A-pillar or the head of the ES-2re might be close enough to the B-pillar that these structures will interfere with the dummy's head before it would contact the oncoming pole. In these circumstances, we may not be able to accurately evaluate the head injury value caused by contact with the external obstacle. In addition, circumstances where there is marginal contact with the vehicle structures could result in reduced test repeatability.

Because our experience shows that head injury is evaluated more accurately and stably using the FMVSS 201 pole test method, we request that NHTSA consider adopting a similar provision for the seating procedures for the mid-size male and small female occupants in the FMVSS 214 pole test to limit head contact with vehicle structures.

Lower Spine Acceleration Data Filtering

Nissan requests further clarification of proposed S11.5 "*Processing Data.*" The proposal would require that the lower spine acceleration data be filtered using a channel frequency class of 1000 Hz and 180 Hz for ES-2re and SID-IIsFRG respectively. The reason for this difference is not evident in the NPRM. We believe that the channel frequency class should be 180 Hz for both dummies based on SAE J211.

ES-2re Injury Values

If the Agency adopts the use of the ES-2re in the final rule, Nissan would support abdominal injury criteria of 2500 N and thoracic injury criteria of 42 mm for the dummy. These values fall within the ranges proposed by NHTSA for ES-2re.

Exemptions from the Oblique Pole Test Requirements

Although further evaluation will be necessary as noted above, Nissan believes that the curtain air bag may be the only practical technology available to meet the newly proposed standard while maintaining a low risk of injury to out of position occupants. Because convertibles lack the structural components necessary to store and deploy a curtain air bag, these vehicles should be exempted from the head injury criteria in the oblique pole tests.